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EXAMINER	
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ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/596,006	BEN-ARI, TSAFRIR	
	Examiner	Art Unit	
	MATTHEW A. FRY	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *29 and 30* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 May 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/13/06 and 9/5/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Note

1. Documents submitted with 371 Application on 5/25/06 included an incorrect search report from PCT/IL03/01067 instead of PCT/IL04/01067. A correct search report is requested.

Election/Restrictions

2. Applicant's election without traverse of claims 1-28 in the reply filed on 8/23/10 is acknowledged.

Drawings

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the handwritten nature of the figures makes the text difficult to read and reduces overall clarity on the part of the figures. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 22a. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are

required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 220 from figure 2 is not identified nor is "88". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "222" has been used to designate both Kalman filter and filter, "14" has been referred to as an optical sensor arrangement and an optical helmet hacking system, "32" has been referred to as a helmet mounted illumination system and an illumination system, "34" has been referred to as a helmet mounted image system and an image system, and "100" has been referred to as the darkest region and the pupil region. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities: the specification does not provide antecedent basis for the communication link transferring data from the inertial navigation system to the helmet (claim 17).

Appropriate correction is required.

Claim Objections

8. Claim 1 is objected to because of the following informalities: "said illumination system" lacks antecedent basis in the claim. For the sake of this action, the Examiner has interpreted this as a typo, and that it refers to the helmet-mounted illumination system previously described. Claim 1 similarly makes the same reference with a helmet mounted imaging system and an imaging system. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 11 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Claim 11 claims a "one element" which is not described in the claim or the specification and thus is considered unclear and indefinite by the examiner.

12. Claim 18 recites the limitation, "perform transfer alignment." This function is unclear as it is not a term well known in the art and the specification does not provide any further explanation or definition.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Sauer et al (US 2002/0075201).

15. In regards to claim 1, Sauer discloses a helmet position measuring system for use in a predefined environment (abstract, claim 18), the system comprising:

(a) a helmet-mounted illumination system for directing electromagnetic radiation of at least one wavelength from the helmet in at least one range of angles (see ¶ 46);

(b) a set of at least three passive reflectors (305-308) deployed at fixed positions in the predefined environment so as to reflect electromagnetic radiation from said illumination system (see figure 3a; ¶ 46-47);

(c) a helmet-mounted imaging system sensitive (206) to at least said at least one wavelength (infrared) for deriving images of part of the predefined environment including electromagnetic radiation reflected from said reflectors (see figure 2a; ¶ 42, 46-47); and

(d) a processing system associated with said imaging system for processing said images to identify regions of said images corresponding to said reflectors and hence to determine information relating to a position of the helmet within the predefined environment (see ¶ 42, 44 and claim 18).

16. In regards to claim 2, Sauer discloses the helmet position measuring system of claim 1, wherein said illumination system includes at least one infrared LED (see ¶ 46).

17. In regards to claim 3, Sauer discloses the helmet position measuring system of claim 1, wherein said imaging system is at least partially selective to electromagnetic radiation of at least one wavelength (see ¶ 46).

18. Claims 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Foxlin et al (US 2002/0194914).

19. In regards to claim 17, Foxlin discloses a helmet position measuring system for determining the position of a helmet relative to a moving platform (see ¶ 45), the moving platform having an inertial navigation system (reference IMU), the system comprising:

(a) an inertial measurement system associated with the helmet (tracking IMU);

(b) a communication link associated with both the helmet and the platform, said communication link transferring data from the inertial navigation system to the helmet (lines from head to processor in figure 4 represent a communications link. ¶ 2 discusses head mounted displays, in which case the process would have to send information to the helmet); and

(c) a processing system (Processor) associated with said inertial measurement system and said communication link, said processing system processing data from said inertial measurement system and said data from the inertial navigation system to derive inertially-derived helmet position data indicative of the helmet position relative to the moving platform (see figure 4; ¶ 46).

20. In regards to claim 18, Foxlin discloses the helmet position measuring system of claim 17, wherein said processing system is configured to perform transfer alignment of

the inertial measurement system from the inertial navigation system of the platform (see ¶ 45-46; equations 9-12).

21. In regards to claim 19, Foxlin discloses the helmet position measuring system of claim 17, wherein said inertial measurement system includes three angular motion sensors deployed in fixed relation to the helmet so as to sense rotational motion about three orthogonal axes (see ¶ 6 and 21).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Kachi et al (US 2004/0016937).

24. In regards to claim 4, Sauer discloses the helmet position measuring system of claim 1, but does not explicitly teach the range of illumination of the leds.

Kachi teaches an illumination system that directs electromagnetic radiation substantially continuously within a horizontal angular range of at least 60 degrees (¶ 5 and figures 22a and b).

LEDs that emit light across 60 degrees are well known in the art, and thus it would have been obvious to one of ordinary skill in the art to modify Sauer with Kachi such that Sauer's LEDs emit light across 60 degrees. Further, the wider the LEDs emit

light, the further the user can turn their head, and still have light reflect off of the markers back to the camera.

25. In regards to claim 5, Sauer as modified discloses the helmet position measuring system of claim 1, wherein said illumination system directs said electromagnetic radiation substantially continuously within a vertical angular range of at least 40.degree (see claim 4 explanation above).

26. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Foxlin (US 6,757,068).

27. In regards to claim 6, Sauer teaches the helmet position measuring system of claim 1, but doesn't discuss the location of a processor.

Foxlin teaches at least part of a processing system (10) is located in a housing external to, and electrically interconnected with, the helmet (12), said housing being configured for wearing on the body of a user (see figure 1; Col 5, lines 13-25).

It would have been an obvious design choice, to one of ordinary skill in the art, to configure the processor to be wearable (as taught by Sauer as modified by Foxlin), as it would allow the system to be portable and more easily set up in new environments and work spaces. Such a modification would provide the same predictable results as small compact processors are commonly known in the art.

28. Claims 7-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Foxlin et al (US 2002/0194914).

29. In regards to claim 7, Sauer teaches the helmet position measuring system of claim 1, but does not discuss an inertial measurement system.

Foxlin teaches an inertial measurement system associated with the helmet and connected to said processing system for providing additional information relating to a position of the helmet (abstract; ¶ 6).

It would have been obvious to one of ordinary skill in the art to incorporate Sauer's optical tracking in Foxlin's motion tracking system, as Foxlin suggest the use of optical tracking in order to correct for drift (see Foxlin ¶ 6 and 8). Such a modification would produce predictable results and correct inertial drift in the determined orientation of the object with respect to the moving reference frame.

30. In regards to claim 8, Sauer as modified discloses the helmet position measuring system of claim 7, wherein said inertial measurement system includes three angular motion sensors deployed in fixed relation to the helmet so as to sense rotational motion about three orthogonal axes (see Foxlin ¶ 6 and 21).

31. In regards to claim 9, Sauer as modified discloses the helmet position measuring system of claim 8, wherein the helmet has a convexly curved external surface (see Sauer figure 2b), and wherein said three angular motion sensors are mounted in proximity to substantially mutually orthogonal regions of said curved external surface (see Foxlin ¶ 21).

32. In regards to claim 11, Sauer as modified discloses the helmet position measuring system of claim 7, wherein the predefined environment is part of a moving platform (cockpit), the moving platform having at least one associated platform position

measurement system (reference IMU; Foxlin figure 3d), the helmet position measuring system (optical system described in claim 1, referred to as "acoustic range measurements in Foxlin figure 4) further comprising a communications link associated with said processing system and with at least one element on the moving platform (Foxlin figure 4 shows a transfer of information from reference IMU to processor which implicitly represents some form of communications link), said communication link transferring platform position information derived from said at least one platform position measurement system to said processing system (see Foxlin figure 4), and wherein said processing system is configured to compute inertially-derived relative motion information relating to motion of the helmet within the predefined environment by comprising said information from said inertial measurement system with said platform position information (see Foxlin ¶ 46 and figures 3d and 4).

33. In regards to claim 12, Sauer as modified discloses the helmet position measuring system of claim 11, wherein said processing system is configured to employ an adaptive filter calculation (Extended Kalman filter) to combine said inertially-derived relative motion information and said position information derived from said images to generate overall helmet position information (see Foxlin figure 4; equations 9-12).

34. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Foxlin et al (US 2002/0194914) and further in view of DeMenthon (US 5,227,985).

35. In regards to claim 10, Sauer, as modified teaches the helmet position measuring system of claim 8, wherein the helmet has a convexly curved external surface (frame work part of helmet, Sauer figure 2b), wherein said three angular motion sensors are mounted relative to curved external surface at substantially mutually orthogonal regions of said surface (see Foxlin ¶ 21). Sauer as modified does not explicitly disclose a concave cover element.

DeMenthon teaches a helmet unit, used in head tracking, wherein the helmet comprises a cover element attached to the helmet, said cover element having a concave surface facing said convexly curved external surface of the helmet (see figure 12).

It would have been an obvious design choice, for one of ordinary skill in the art, to place a cover element over the framework of Sauer and place the motion sensors on the cover element. Such a modification would have no impact on the function of the device and would provide the same predictable results, with an added benefit of possibly further head protection.

36. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Foxlin et al (US 2002/0194914) and further in view of Foxlin (US 6,757,068).

37. In regards to claim 13, Sauer as modified discloses the helmet position measuring system of claim 11, but does not explicitly disclose said communications link is implemented as a wireless communications link. Foxlin (6,757,068) teaches a

wireless connection between a computer and an optical position tracker (Col 14, lines 30-42). Use of a wireless connection in stead of wired is commonly known in the art and has the added benefit of portability. As such, It would have been obvious to one of ordinary skill in the art to modify Sauer, as modified, with the wireless connection of Foxlin.

38. Claims 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foxlin et al (US 2002/0194914) in view of Sauer et al (US 2002/0075201).

39. In regards to claim 20, Foxlin discloses the helmet position measuring system of claim 19, wherein the helmet has a convexly curved external surface, and wherein said three angular motion sensors are mounted in proximity to substantially mutually orthogonal regions of said curved external surface (see claim 7 and claim 9 explanation).

40. In regards to claim 22, Foxlin discloses the helmet position measuring system of claim 17, further comprising an optical measuring system associated with said processing system (see ¶ 6), and wherein said processing system is additionally for co-processing said inertially-derived helmet position data and optically-derived helmet position data to generate overall helmet position information (see figure 4; and equations 9-12). Foxlin does not go into depth as to the structure of said optical measuring system.

Sauer teaches an optical measuring system including:

(a) at least three markers (305-308) mounted on a first of the helmet and the moving platform (figure 3a);

(b) at least one camera (206) mounted on the other of the helmet and the moving platform for generating an image of at least said markers (see figure 2a; ¶ 42, 46-47); and

(c) image processing means (processor) for processing said image to generate optically-derived helmet position data (see ¶ 42, 44 and claim 18).

It would have been obvious to one of ordinary skill in the art to incorporate Sauer's optical tracking in Foxlin's motion tracking system, as Foxlin suggest the use of optical tracking in order to correct for drift (see Foxlin ¶ 6 and 8). Such a modification would produce predictable results and correct inertial drift in the determined orientation of the object with respect to the moving reference frame.

41. In regards to claim 23, Foxlin as modified discloses the helmet position measuring system of claim 22, wherein said camera (206) is mounted on the helmet, and wherein said at least three markers (305-308) are mounted on the moving platform (see Sauer figures 2a and 3a).

42. In regards to claim 24, Foxlin as modified discloses the helmet position measuring system of claim 23, wherein said optical measuring system includes at least one illumination source (LED) mounted on the helmet, and wherein said at least three markers are passive reflective markers (see Sauer ¶ 46).

43. Claims 21 and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foxlin et al (US 2002/0194914) in view of DeMenthon (US 5,227,985).

44. In regards to claim 21, Foxlin teaches the helmet position measuring system of claim 19 wherein said three angular motion sensors are mounted at substantially mutually orthogonal regions (see Foxlin ¶ 21) but does not discuss the structure of the helmet of head mount.

DeMenthon teaches a helmet that has a convexly curved external surface (helmet), the system further comprising a cover element (element holding LEDs) attached to the helmet, said cover element having a concave surface facing said convexly curved external surface of the helmet.

It would have been an obvious design choice, for one of ordinary skill in the art, to mount Foxlin's angular sensors relative to the cover elements of the helmet taught by DeMenthon. Such a modification would have no impact on the function of the device and would provide the same predictable results, with an added benefit of possibly further head protection.

45. In regards to claim 27, Foxlin discloses a helmet assembly having a position measuring system, the helmet assembly comprising:(a) a helmet having a convexly curved external surface (DeMenthon figure 12), and(b) an inertial measurement system including three angular motion sensors deployed in fixed relation to the helmet so as to sense rotational motion about three orthogonal axes, wherein said three angular motion sensors are mounted in proximity to substantially mutually orthogonal regions of said curved external surface (see Foxlin ¶ 21 and 45-46; see claim 21 explanation above).

46. In regards to claim 28, Foxlin as modified discloses a helmet assembly having a position measuring system, the helmet assembly comprising:(a) a helmet having a convexly curved external surface;(b) a cover element attached to the helmet, said cover element having a concave surface facing said convexly curved external surface of the helmet; and(c) an inertial measurement system including three angular motion sensors for sensing rotational motion about three orthogonal axes, wherein said three angular motion sensors are mounted relative to said cover element at substantially mutually orthogonal regions of said concave surface (see claim 17 and 21 explanations above; DeMenthon figure 12; Foxlin ¶ 21 and 45-46).

47. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Foxlin et al (US 2002/0194914) in view of Foxlin (US 6,757,068) and further in view of Ben-Ari et al (US 2002/0039073).

48. In regards to claim 14, Sauer as modified discloses the helmet position measuring system of claim 13, but does not disclose the communications link being associated with a missile.

Ben-Ari teaches a communications link that is associated with at least one of the group: a processing unit within a missile; and a processing unit within a missile launcher (see figure 2).

Ben-Ari teaches use of helmet positional tracking to determine gaze direction in order to transmit target directions for the weapons system (¶ 55 and 59). As Ben-Ari teaches the use of such a system, but does not describe the specific structure, it would

have been obvious to one of ordinary skill in the art to utilize the position measurement system taught by Sauer, as modified. Such a modification would provide predictable results.

49. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al (US 2002/0075201) in view of Ben-Ari et al (US 2002/0039073).

50. In regards to claim 15, Sauer discloses the helmet position measuring system of claim 1, but does not explicitly disclose an eye-tracking system.

Ben-Ari teaches a helmet-mounted eye-tracking system for tracking a gaze direction of at least one eye relative to a helmet (¶ 21).

Ben-Ari teaches use of helmet positional tracking to determine gaze direction in order to transmit target directions for the weapons system (¶ 55 and 59). As Ben-Ari teaches the use of such a system, but does not describe the specific structure, it would have been obvious to one of ordinary skill in the art to utilize the position measurement system taught by Sauer. Such a modification would provide predictable results.

51. In regards to claim 16, Sauer as modified discloses the helmet position measuring system of claim 15, wherein said eye-tracking system is associated with said processing system, said processing system calculating a gaze direction of the at least one eye relative to the predefined environment (see Ben-Ari figure 2; ¶ 55 and 59). The processing calculates the direction that the helmet is facing, and then the direction that the eye gaze is facing in relation to the helmet, and finally computers the gaze direction in relation to the cockpit (Ben-Ari ¶ 23).

52. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foxlin et al (US 2002/0194914) in view of Ben-Ari et al (US 2002/0039073).

53. In regards to claim 25, Foxlin discloses the helmet position measuring system of claim 17, but does not explicitly disclose an eye-tracking system.

Ben-Ari teaches a helmet-mounted eye-tracking system for tracking a gaze direction of at least one eye relative to a helmet (¶ 21).

Ben-Ari teaches use of helmet positional tracking to determine gaze direction in order to transmit target directions for the weapons system (¶ 55 and 59). As Ben-Ari teaches the use of such a system, but does not describe the specific structure, it would have been obvious to one of ordinary skill in the art to utilize the position measurement system taught by Foxlin. Such a modification would provide predictable results.

54. In regards to claim 26, Foxlin as modified discloses the helmet position measuring system of claim 25, wherein said eye-tracking system is associated with said processing system, said processing system calculating a gaze direction of the at least one eye relative to the predefined environment (see Ben-Ari figure 2; ¶ 55 and 59). The processing calculates the direction that the helmet is facing, and then the direction that the eye gaze is facing in relation to the helmet, and finally computers the gaze direction in relation to the cockpit (Ben-Ari ¶ 23).

Conclusion

55. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW A. FRY whose telephone number is (571) 270-7355. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 5:00 PM, alternate Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bipin Shalwala/
Supervisory Patent Examiner, Art Unit 2629

/MATTHEW A FRY/
Examiner, Art Unit 2629